

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method of making a diamond product having a projection or a depression on a surface thereof by etching, said method comprising the steps of:
forming a diamond substrate with a mask layer including a metal layer in at least one part thereof; and
etching said diamond substrate formed with said mask layer with a plasma of a mixed gas composed of a gas containing an oxygen atom and a gas containing a fluorine atom;
wherein said fluorine atom has a concentration within the range of 0.04% to 6% with respect to the total number of atoms in said mixed gas, said plasma is produced by generating a high-frequency discharge between two plate electrodes, said high-frequency discharge is generated by supplying an electric power of at least 0.45 W/cm^2 between said plate electrodes, and said mixed gas further contains nitrogen gas, thereby to form the diamond product having a the projection having or depression with a side face with an angle of inclination of at least 78 degrees,
wherein said mixed gas contains nitrogen gas in an amount such that the intensity ratio A/B of said mixture is greater than the intensity ratio A/B of pure oxygen, where A is the intensity of an emission peak caused by atomic oxygen and B is the intensity of an emission peak caused by molecular oxygen.
2. (Cancelled)
3. (Previously Presented) A method of making a diamond product according to claim 1, wherein said gas containing said fluorine atom is CF_4 gas; and

wherein said CF_4 gas has a concentration within the range of 0.02% to 3% with respect to the total number of molecules in said mixed gas.

4. (Original) A method of making a diamond product according to claim 1, wherein said gas containing said oxygen atom is one of O_2 , CO_2 , and a mixed gas composed of O_2 and CO_2 .

Claims 5-11. (Cancelled)